

EXHIBIT 20



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Al-Ali

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(54) **PHYSIOLOGICAL MEASUREMENT
DEVICES, SYSTEMS, AND METHODS**

(56) **References Cited**

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(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
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This patent is subject to a terminal dis-
claimer.

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(Continued)

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CPC **A61B 5/14552** (2013.01); **A61B 5/0002**
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(58) **Field of Classification Search**
None

See application file for complete search history.

(57) **ABSTRACT**

A non-invasive, optical-based physiological monitoring sys-
tem is disclosed. One embodiment includes an emitter
configured to emit light. A diffuser is configured to receive
and spread the emitted light, and to emit the spread light at
a tissue measurement site. The system further includes a
concentrator configured to receive the spread light after it
has been attenuated by or reflected from the tissue measure-
ment site. The concentrator is also configured to collect and
concentrate the received light and to emit the concentrated
light to a detector. The detector is configured to detect the
concentrated light and to transmit a signal representative of
the detected light. A processor is configured to receive the
transmitted signal and to determine a physiological param-
eter, such as, for example, arterial oxygen saturation, in the
tissue measurement site.

25 Claims, 7 Drawing Sheets

